Math 2253 Practice Test 2 Answers Fall 2016

1. Find the derivative of each of the following functions:

(a)  (b) 

 

(c)  (d) 

Do not forget that is a constant, so the answer is  times the derivative of .





2. Find the slope of the graph of the function at the given point:

 (2, 18)

Note that the quantity that gives the slope of the graph is the derivative. In problems of this nature you do not use the *y*-value. It is given just to locate the point on the curve.



Slope =

3. Find an equation of the line tangent to  at (−1, −2)

Note that is used to denote the value of when 



Slope = 

Now use the point slope form 



4. Find the points at which the graph of the function has a horizontal tangent line:



The tangent is horizontal at points where the derivative is zero.





Note that the question asks you to find points, so you must also find the *y*-coordinates.





Ans: 

5. Find the derivative of each of the following functions:

(a)  (b) 





This simplifies to 

6. Find the derivative of each of the following functions

(a) 

Use the generalized power rule: 





(b) 



Note that this simplifies to 

(c) (To test your understanding of the chain rule). You read in an article that the derivative of where  is . Find the derivative of 

According to the chain rule the derivative of w.r.t. *x* is 



7. Find the derivative of each of the following functions:

(a)  (b) 





(c)  (d) 



You have to use the product rule on each term.



8. Find the second derivative of each of the following functions.

(a)  (b) 



